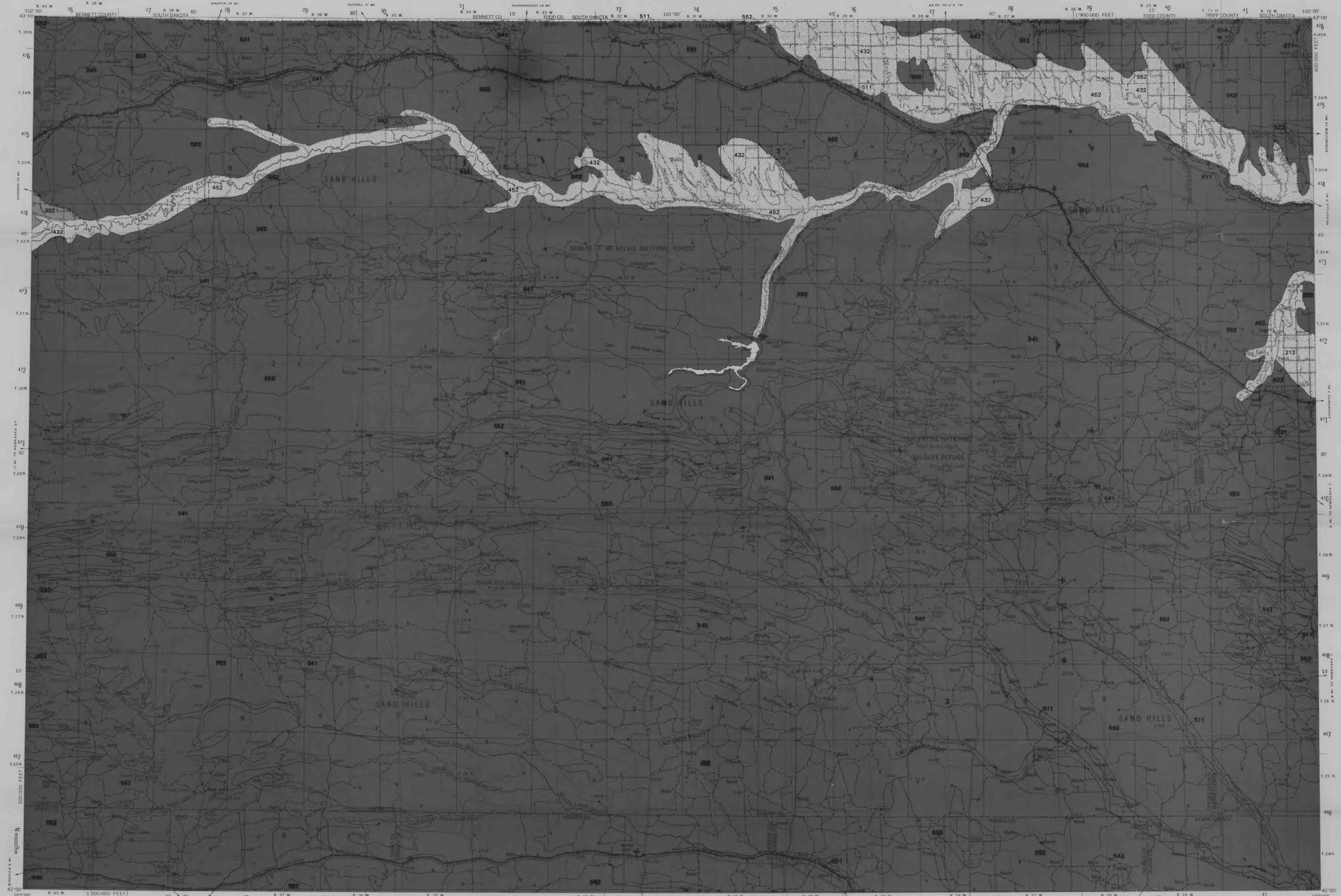
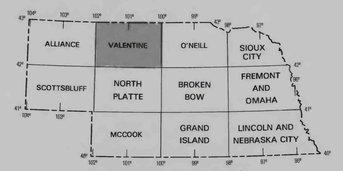
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER SUPPLY PAPER 2222
PLATE 3





INDEX MAP OF NEBRASKA SHOWING AREA OF PLATE (SHADED)

SCALE 1:250 000

5 0 5 10 15 20 25 MILES

5 0 5 10 15 20 25 KILOMETERS

1983 MAGNETIC DECLINATION FROM TRUE NORTH VARIES FROM 10½° EASTERLY FOR THE CENTER OF THE WEST EDGE TO 9° EASTERLY FOR THE CENTER OF THE EAST SIDE

HYDROLOGIC SOIL GROUPS IN THE VALENTINE QUADRANGLE, NEBRASKA

Map based on "General Soil Map of Valentine area, Nebraska," U.S. Department of Agriculture Soil Conservation Service and Conservation and Survey Division, University of Nebraska-Lincoln, (1978-82). Hydrologic characteristics derived from soil-properties data (U.S. Department of Agriculture Soil Conservation Service, 1978).

DESCRIPTIONS OF THE SOIL GROUPS

212 Silty clay loams to silt loams with (a) permeabilities from 1.0 to 2.0 inches per hour, (b) nearly level to very gentle slopes (maximum slopes 1 to 3 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are present on well-drained terraces and uplands in the central part of the State and are represented by the Hord-Hall and Holdrege-Hall associations.

332 Silt loams to fine sandy loams with (a) permeabilities from 2.0 to 5.0 inches per hour, (b) nearly level to moderately steep slopes (maximum slopes 10 to 20 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are common in transitional areas between the sandhills and silty uplands and are represented by the Kenesaw-Hersh and Oglala-Jayem associations.

432 Fine sandy loams to fine sands with (a) permeabilities from 5.0 to 10.0 inches per hour, (b) nearly level to steep slopes (maximum slopes 10 to 20 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils occur on uplands and high terraces in transitional areas between sandy and silty soils and are represented by the Thurman-Boelus-Nora and Moody-Thurman associations.

452 Fine sandy loams to fine sands with (a) permeabilities from 5.0 to 10.0 inches per hour, (b) gentle to very steep slopes (maximum slopes exceeding 30 percent), and (c) depths to seasonal high water table exceeding 6 feet. These are principally shallow residual soils formed in sandstone on highly eroded uplands in the northern Panhandle of the State and are represented by the Busher-Sarben-Tassel and Tassel-Busher associations.

511 Fine sandy loams to fine sands with (a) permeabilities exceeding 10.0 inches per hour, (b) nearly level to very gentle slopes (maximum slopes 1 to 3 percent), and (c) shallow water tables with depths to seasonal high water table less than 6 feet. These soils are on flood plains and in Sand Hills valleys and are represented by the Gothenburg-Platte and Loup-Elsmere-Dunday associations.

521 Loamy fine sands to fine sands with (a) permeabilities exceeding 10 inches per hour, (b) nearly level to strong slopes (maximum slopes 3 to 10 percent), and (c) shallow water tables with depths to seasonal high water table less than 6 feet. These soils occupy extensive subirrigated valleys within the Sand Hills region and are represented by the Els-Valentine-Ipage and Elsmere-Dailey associations.

522 Loams to sands and gravels with (a) permeabilities exceeding 10.0 inches per hour, (b) nearly level to strong slopes (maximum slopes 3 to 10 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils occur in the uplands and are represented by the Jansen-O'Neill and O'Neill-Dunday-Meadin associations.

541 Loamy fine sands to fine sands with (a) permeabilities exceeding 10.0 inches per hour, (b) nearly level to very steep slopes (maximum slopes 20 to 30 percent), and (c) substantial areas having depths to seasonal high water table less than 6 feet. This hydrologic soil group is rather unique in that steeply sloping dunes alternate with subirrigated valleys with shallow water tables and seasonal ponding. The Valentine-Els and Valentine-Elsmere-Gannett associations represent these soils.

542 Loamy fine sands to fine sands with (a) permeabilities exceeding 10.0 inches per hour, (b) nearly level to very steep slopes (maximum slopes 20 to 30 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are principally found in the Sand Hills uplands and are represented by the Valentine-Tassel and Valentine-Simeon associations.

552 Loamy fine sands to fine sands with (a) permeabilities exceeding 10.0 inches per hour, (b) gentle to very steep slopes (maximum slopes exceeding 30 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are the most prevalent upland soils of the Sand Hills and are represented by the Valentine and Valentine, hilly and rolling associations.

HYDROLOGIC CHARACTERISTICS OF THE SOIL GROUPS

Soil group	Average permeability of 60-inch soil profile (inches per hour)	Average permeability of least permeable horizon (inches per hour)	Average available water capacity (inches per inch)	Average maximum soil slope (percent)	Depth to seasonal high water table (feet)
212	1.23	1.14	.20	3	>6
332	3.29	2.93	.18	12	>6
432	6.56	2.94	.14	13	>6
452	7.54	4.00	.15	36	>6
511	12.90	3.99	.09	3	<6
521	12.86	10.53	.07	8	<6
522	12.37	3.32	.10	6	>6
541	12.67	11.38	.08	27	<6
542	12.20	7.57	.08	27	>6
552	12.38	10.67	.07	50	>6